What is claimed is:

1. A shaft-hub connection for transmitting a torque comprising:

a shaft having an axial direction;

a hub; and

at least one driving element for aiding in transmitting the torque between the shaft and the hub;

a contact surface being minimized in the axial direction between at least one of: the shaft and the hub; the shaft and the driving element; and the hub and the driving element.

2. The shaft-hub connection as recited in claim 1 wherein at least one force-transmitting element selected from the shaft, hub and at least one driving element has the minimized contact surface, the minimized contact surface being convexly curved.

3. The shaft-hub connection as recited in claim 1 wherein the shaft is convexly shaped on an outside circumference in an area of the hub or is relieved by two chamfers on the outside circumference.

4. The shaft-hub connection as recited in claim 1 wherein the hub is convexly shaped on an inside circumference or is relieved by two chamfers on the inside circumference.

5. The shaft-hub connection as recited in claim 1 wherein the shaft has a shaft groove and the hub has a hub groove, the driving element being located between the shaft and the hub partly in the shaft groove and partly in the hub groove, the shaft groove and the hub groove extending axially, the driving element being a circular cylinder, and the shaft groove being convexly shaped at least in an area against which the driving element bears during torque transmission.

6. The shaft-hub connection as recited in claim 5 wherein the contact surface between the shaft groove and the driving element is virtually centered.

7. The shaft-hub connection as recited in claim 5 wherein the shaft groove has a groove base from where two groove walls start, the groove walls and the groove base of the shaft groove being convexly shaped in the area against which the driving element bears.

8. The shaft-hub connection as recited in claim 1 wherein the shaft has a shaft groove and the hub has a hub groove, the driving element being located between the shaft and the hub partly in the shaft groove and partly in the hub groove, the shaft groove and the hub groove extending axially and each of the hub groove and the shaft groove having a groove base from where two groove walls start, the driving element being a circular cylinder with a convexly shaped lateral surface.

9. The shaft-hub connection as recited in claim 1 wherein the shaft has a shaft groove and the hub has a hub groove, the driving element being located between the shaft and the hub partly in the shaft groove and partly in the hub groove, the shaft groove and the hub groove extending axially, the driving element being a circular cylinder and the hub groove being convexly shaped in an area against which the driving element bears.

10. The shaft-hub connection as recited in claim 9 wherein the contact surface between the hub groove and the driving element is virtually centered.

11. The shaft-hub connection as recited in claim 9 wherein the hub groove has in each case a groove base from where two groove walls start, the groove base and the groove walls of the hub groove being convexly shaped in the area against which the driving element bears.

12. The shaft-hub connection as recited in claim 1 wherein the shaft has a shaft groove and the hub has a hub groove, the driving element being located between the shaft and the hub partly in the shaft groove and partly in the hub groove, and the driving element has the shape of a sphere.

13. The shaft-hub connection as recited in claim 12 wherein in cross section the hub groove and the shaft groove form a semicircle, with ends of the semicircle of the shaft groove and/or the hub groove changing tangentially to a straight line or a circular arc with an increasing radius.

14. The shaft-hub connection as recited in claim 12 wherein the hub groove and/or the shaft groove have a trapezoidal cross section.

15. The shaft-hub connection as recited in claim 9 wherein in cross section the hub groove and the shaft groove form a semicircle, with ends of the semicircle of the shaft groove and/or the hub groove changing tangentially to a straight line or a circular arc with an increasing radius.

16. The shaft-hub connection as recited in claim 9 wherein the hub groove and/or the shaft groove have a trapezoidal cross section.

17. The shaft-hub connection as recited in claim 8 wherein in cross section the hub groove and the shaft groove form a semicircle, with ends of the semicircle of the shaft groove and/or the hub groove changing tangentially to a straight line or a circular arc with an increasing radius.

18. The shaft-hub connection as recited in claim 8 wherein the hub groove and/or the shaft groove have a trapezoidal cross section.

19. The shaft-hub connection as recited in claim 5 wherein in cross section the hub groove and the shaft groove form a semicircle, with ends of the semicircle of the shaft groove and/or the hub groove changing tangentially to a straight line or a circular arc with an increasing radius.

20. The shaft-hub connection as recited in claim 5 wherein the hub groove and/or the shaft groove have a trapezoidal cross section.

21. The shaft-hub connection as recited in claim 1 wherein the driving element includes a lug whose extent in the axial direction of the shaft is small in relation to the extent of the hub in the same direction.

22. The shaft-hub connection as recited in claim 21 wherein the driving element includes a ring-shaped insert, the ring shaped insert having the lug and at least one second lug engaging a support formed on the shaft, and the lug engaging a support formed on the hub.

23. A pump or fluid-driven motor comprising a shaft-hub connection as recited in claim 1.

24. The pump as recited in claim 23 wherein the pump or fluid-driven motor is a vane-type pump or motor, gear pump or motor, or roller-vane pump or motor.

25. A vane-type machine comprising:

a drive shaft having an axial direction;

a rotor driven by the drive shaft, the rotor being rotatably mounted inside a lift ring between two lateral faces, the rotor having a circumferential surface with slots running radially and extend across an entire width of the rotor, the rotor having vanes being bearing-mounted in the slots so as to be radially movable, the drive shaft being connectable to the rotor via a shaft-hub connection;

at least one driving element for aiding in transmitting torque between the drive shaft and the rotor;

a contact surface being minimized in the axial direction between at least one of: the drive shaft and the rotor; the drive shaft and the driving element; and the rotor and the driving element.

26. The vane type machine as recited in claim 25 wherein the rotor is a pump rotor.

27. A vane-type pump comprising:

a rotor having a counterbore on an inside diameter;

a pump casing;

a sliding bearing bushing;

a shaft for driving the rotor being rotatably mounted through the sliding-bearing bushing in the pump casing, the sliding-bearing bushing protruding into the counterbore, the shaft being connectable to the rotor via a shaft-hub connection; and

at least one driving element for aiding in transmitting torque between the shaft and the rotor;

a contact surface being minimized in the axial direction between at least one of: the shaft and the rotor; the shaft and the driving element; and the rotor and the driving element.

28. The vane-type pump as recited in claim 27 wherein the shaft is a converter neck shaft.